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REMARKS:Status

After entry of this response, claims 1 to 5, 7 to 22, 24 to 39, 41 to 51, and 72 to 85 will be pending. Claims 6, 23 and 40 have been cancelled, claims 1, 7, 8, 18, 24, 25, 35, 41 and 42 have been amended, and claims 72 to 85 have been added herein. Claims 1, 18, 35, 72 and 79 are the independent claims. Entry of this response, reconsideration and further examination are respectfully requested.

Claim Listing

Pursuant to a telephone conversation with the Examiner, the listing of the claims in this paper shows changes relative to the claims as pending when the outstanding final Office Action was issued.

Withdrawal of Arguments in Previous Response

Applicants hereby formally withdraw all arguments presented in the previous response to the outstanding final Office Action in this case. The claim language that formed the basis for those arguments is no longer present in the claims, rendering the arguments moot.

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Claim Rejections

Claims 1 to 6, 18 to 23, and 35 to 40 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 5,864,655 (Dewey). Claims 7 to 10, 12 to 17, 24 to 27, 29 to 34, 41 to 44, and 46 to 51 were rejected under 35 U.S.C. § 103(a) over Dewey. Claims 11, 28 and 45 were rejected under § 103(a) over Dewey in view of U.S. Patent No. 5,666,511 (Suganama).

Discussion of Claims

Claim 1 as amended is reproduced below:

An apparatus, including
a mass storage device including one or more disk drives, each disk drive having a plurality of storage blocks, each of said storage blocks including a plurality of sectors;
wherein each storage block of said plurality of storage blocks includes a data portion and an error code portion, said data portion storing data for said storage block, and said error code portion including a checksum responsive to said data portion; and
wherein parity data is used to correct an error detected using said checksum.

The applied art is not seen to disclose or to suggest the foregoing features of claim 1, at least with respect to the feature that "parity data is used to correct an error detected using said checksum." For example, not intended to be limiting in any way, a checksum could be used to detect a location of an error, and parity data could be used to correct that error.

In this regard, the Office Action appears to Applicants to have equated parity and checksum operations. For example, the rejection of claim 6 in paper no. 6, which was referenced in the outstanding Office Action, indicated that Dewey taught a checksum operation at col. 1,

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lines 34 to 37, and Figure 7A. However, as explicitly stated by Dewey at this very location, the cited operation is a parity operation "calculated bit-by-bit for all five data blocks (such as with an exclusive-OR algorithm)." An exclusive-OR operation, for example for a parity calculation, is not equivalent to a checksum.

In this regard, the rejection of claim 6 in paper no. 6 stated that "an exclusive-OR is a checksum operation." Applicants respectfully disagree. While various forms of checksums exist, Applicants' understanding is that checksums involve either counts of bits in data or mathematical formulas performed on data values. Applicants are not aware of any checksums that simply perform exclusive-OR operations on data values. An operation that solely performs exclusive-OR operations on data values is not a checksum, but rather is a parity operation.

In support of Applicants' contention that checksum are different from exclusive-OR and parity operations, Applicants note that the word "checksum" does not even appear once in any of the references applied against the claims in paper no. 6, which includes the two references applied in the outstanding Office Action. However, "parity" is discussed in all three of those references.

Applicants respectfully submit that without discussing checksum operations as well as parity operations, the applied references cannot teach claim 1's feature that "parity data is used to correct an error detected using said checksum." Claim 1 is therefore believed to be allowable over the applied art. Such action is respectfully requested, as is allowance of the claims that depend from claim 1.

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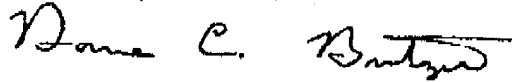
Amended independent claims 18 and 35 recite use of parity data to correct an error detected using a checksum. New independent claims 72 and 79 recite use of parity data to correct errors detected using checksum data. As discussed above, the applied art is not seen to teach these features. Accordingly, allowance of claims 18, 35, 72 and 79, as well as their dependent claim, is respectfully requested.

Closing

In view of the foregoing amendments and remarks, the entire application is believed to be in condition for allowance, and such action is respectfully requested at the Examiner's earliest convenience.

Applicants' undersigned attorney can be reached at (614) 486-3585. All correspondence should continue to be directed to the address indicated below.

Respectfully submitted,



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